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Taking a long view in child welfare: how can we evaluate intervention and child well-being over time?

Authors: Janice McGhee (School of Social and Political Science, University of Edinburgh) Fiona Mitchell (Scottish Child Care and Protection Network, University of Stirling), Brigid Daniel (School of Applied Social Science, University of Stirling) and Julie Taylor (School of Nursing and Midwifery, University of Dundee and Strategy and Development: Abuse in High Risk Families, NSPCC, Edinburgh, UK.).

Abstract This paper synthesises ideas generated from an international knowledge exchange seminar series to explore the potential and pitfalls in utilising routine administrative data and survey data for longitudinal research about children involved in public child welfare services. Methodological, technical and ethical issues are explored, including the challenges in capturing the nature, focus and intensity of intervention. It is suggested that assessing child wellbeing across a range of dimensions in the short, medium and long-term may provide a better conceptual basis for research than defining specific outcomes.

INTRODUCTION

Children caught up in public child welfare services represent a relatively small but significant group within the child population. They frequently require substantial levels of support and service due to the presence of abuse, neglect and other associated risks to their wellbeing. The limited longitudinal research on their pathways through child welfare services and long-term outcomes hinders policy and practice development. At the same time a lack of systematic knowledge about the impact of multi-disciplinary services provided collectively by agencies impedes understanding of long-term wellbeing.

There is a major gap in knowledge regarding the combined impact of routine multi-professional intervention and services on the wellbeing of this child population – ‘services-as-usual’ (Thoburn, 2010). The majority of children involved with child welfare services tend to receive a limited range of ‘intervention’ (Brandon and Thoburn, 2008) and oftentimes ‘haphazard’ prevention services (Waldfoegel, 2009). These children frequently come from the most disadvantaged families who may benefit least from universal early intervention programmes (Rutter, 2006). The complex nature and dynamics of the problem of child abuse and neglect, and assessment of the impact of intervention does not easily lend itself to traditional randomised controlled studies. It has been conceptualised as a ‘wicked problem’ (Devaney and Spratt (2009) using Rittel and Webber’s (1973) analysis of problem definition in social planning). In their formulation, child maltreatment is complex, dynamic, imprecisely defined, requiring diverse solutions that can often only be tested in action and are not easily reversed (such as permanent separation of child and parent). The importance of social context, including dimensions of class, race, culture and employment, in understanding and responding to child maltreatment is echoed in other multifaceted problems such as social determinants of health (Kelly *et al.*, 2007).

The power of combining administrative data to track trajectories for this group of children through child welfare, education, health and other services, and to examine long-term outcomes is being utilised in child welfare research in North America (Jonson-Reid and Drake, 2008; Brownell *et al.*, 2010; Putnam-Hornstein *et al.*, 2011) and increasingly in Australia (Australian Institute for Health and Welfare, 2011). In addition, methodologies to link administrative data with longitudinal survey data to populate gaps and examine outcomes for children more comprehensively are developing (Dearden, 2010). Including data on routine multi-professional intervention and service provision in both types of data offers an opportunity to create a synoptic view of this group of children and assess outcomes and wellbeing over time.

This paper synthesises ideas generated from an international knowledge exchange seminar series (McGhee *et al.* 2011) designed to explore the opportunities and drawbacks in utilising routine administrative data and longitudinal survey data in child welfare research. Methodological, technical and ethical dimensions are discussed. The seminars were organised by a programme team drawn from the research working group of the Scottish Child Care and Protection Network (SCCPN) and devolved (Scottish) and local government. The SCCPN is a collaborative cross-institutional network of academics, policy makers and practitioners committed to disseminating research evidence and supporting best practice across Scotland. The Scottish Universities Insight Institute (SUII), a partnership of 6 Scottish Universities established to promote multi-disciplinary and multi-sector knowledge exchange programmes relevant to Scotland and beyond, provided funding and support.

Three seminars were held between March and June 2011. These addressed two overarching questions: First, to explore the opportunities for linking data routinely collected on children and families to inform operational decision-making, planning and research; Second, to distill knowledge from established child cohort studies to inform a longitudinal survey design that could incorporate data on routine multi-professional intervention and outcomes for children vulnerable to neglect and maltreatment.

ADMINISTRATIVE DATA

The centrality of administrative data to future social science research

The knowledge exchange programme was timely in the context of what is a developing zeitgeist within social science research more generally. There is evident widespread interest in extending the use of administrative data for research and statistical purposes in the UK, exemplified by the creation of the Administrative Data Liaison Service (ADLS) <http://www.adls.ac.uk/about/> as a support mechanism. Three factors have contributed to this changing research environment: technological advances in computer hardware and software; the demand for public services to demonstrate effectiveness and efficiency (for example, Scottish Government, 2007a; 2007b; Tilbury, 2004); and a reduction in levels of investment in social science research (SRA, 2010). There is recognition that the potential of administrative data is “geometrically greater” (Johnson-Reid and Drake, 2008) if it can be linked across multiple sectors and to other research data sources. Linkage of individual level data on children subject to public care

measures with educational attainment identified school exclusion was highest for children in local authority residential care (Scottish Government, 2011). Putnam-Hornstein *et al* (2011) linked child protection service records with birth record data in California State, USA, for all children born between 1999 and 2002 up to age five years to identify population level rates of maltreatment (14% of children were referred before age five) and factors at birth associated with differential levels of referral between population groups.

The potential of multi-sector, multilevel, longitudinal administrative datasets

Jonson-Reid and Drake (2008) present a convincing case for the technical, methodological and ethical feasibility of combining administrative datasets for research into child welfare services. At a practical level, the construction of multi-sector, multi-level, longitudinal administrative datasets is much more readily conceivable than previously. Increasingly public services operate electronic recording systems and archive data about vital events and cases. Technological advances in hardware and software make it possible to (relatively) easily extract and link data from these systems. Linkage may use different methods of matching cases (deterministic where there are unique identifiers, probabilistic, normally based on a mix of demographic data, often with some manual checks) are likely to be required. Such systems are likely to have (some) commonality across geographical areas within the same jurisdiction as they have been devised in response to the shared legal and policy framework. Extracted data can usually be deconstructed and recombined at multiple levels (i.e. at individual, family, community) with little additional cost. The majority of work required to construct a database at each of these levels is common to all (obtaining, cleaning, linking etc.) and relatively little additional work is required to frame the data at different levels of analysis. Utilising administrative data for longitudinal research is likely to be more cost-efficient than traditional research methods, and can be achieved within a shorter timescale. The potential to extract and analyse contemporaneous data also offers the opportunity to be 'real time responsive' to practice issues.

Methodologically, such datasets have much to offer. By their very nature, they can be used to address questions about: populations in receipt of services, pathways in and out of services, what services are actually provided over time, and the interaction of service provision from across service sectors. As the systems have evolved to support the application of legal, policy and practice frameworks, they naturally contain constructs specified by and relevant to the field. The time-ordered nature of data entry makes it possible to reconstruct chronologies of events, follow pathways through multiple services and to explore interactions between service systems. Using multi-sector data can also help to address missing data within a single system, if systems record similar data. Linking multiple datasets can bring together similar data fields that can be used to cross-check the validity and reliability of data within single systems; it can also be used as a check against instruments administered directly by researchers, which may be less reliable, for example, due to issues around recall.

Untapping the potential: increasing the relevance of and quality of data

Addressing research questions concerning combined multi-professional and multi-agency 'service-as-usual' requires a range of data about the child, their family and their social circumstances. This is in addition to data that capture the nature of the service provided and the impact it has had on the developmental progress of the child. It is not possible to assume that such data will be recorded, either at all, or reliably, across service sector information systems. As Johnson-Reid and Drake (2008) note the most obvious limitation of administrative data is that key constructs and variables are not commonly recorded. This can render some information systems unusable for some substantive issues.

Appraising what data are available is a significant challenge. Information systems used for operational purposes are adaptive and evolve to take account of changes in legal, policy, procedural and organisational structures. Although considerable volumes of data are collected, there is no shared understanding of what is collected by single agencies or of what data exist for an individual child, from pre-birth to 18, or their parents resulting from any contact with universal, secondary, or tertiary services (McGhee *et al.*, 2011). A key theme to emerge from the seminars was a need for better-informed decisions about *why*, *what* and *how* data are recorded. The measurement of changes in wellbeing over time for people in receipt of services was identified as a key gap, despite the operationalisation of an outcomes-focused approach to practice with children (Scottish Government, 2008) and the potential to apply learning from large-scale evaluation (Stradling *et al.*, 2009). On service provision, there was some consensus that much less is known about defining and measuring routine multi-agency practice with children and families as opposed to specific, 'manualised' interventions, such as the Family-Nurse Partnership. This is a key area for methodological development.

It was thought that harnessing the knowledge of practitioners, managers, policy leads, researchers and analysts *together* will enhance the feasibility and functionality of data recording and information systems, and reduce duplication of data collection. Bringing together this mix of knowledge and skill could also improve approaches to measuring and recording information about:

- the demographic characteristics and circumstances of individuals using services;
- what service provision actually entails; and
- in defining and recording measures of wellbeing of individuals in receipt of services.

Arguably, these different constituents might share the same motivation for collecting and analysing data – to better understand what works for whom and in what contexts to better match service responses to the needs of all children and young people. However, they bring different, but supplementary, knowledge to inform the construction of information systems that can produce data that begin to answer this question. For example, practitioners and managers may be best placed to identify *what* it is important to collect, with researchers perhaps best placed to consider *how* to construct data fields and measurements that can be aggregated and/or recoded for analysis.

Targets and key performance indicators can derail efforts to achieve meaningful data and can negatively influence practice behaviours (Tilbury, 2004). Maintaining a mix of

knowledge and skills may help to ensure that the data recorded are and remain meaningful and relevant to planning, quality assurance and evaluation. A core theme from the seminar discussion was the critical importance of practitioner and manager involvement in defining and developing the criteria/measurements for data recording and collection and in interrogating and using the data for service design, development and evaluation (McGhee *et al.*, 2011). Extracting and interrogating existing data, alongside practitioners, provides an opportunity to explore its meaning and value. Understanding the meaning, and the strengths and limitations of what is recorded is a process. With increased understanding, it was argued that there would be greater ownership and commitment to improving the quality of data recording. This would require time and a cultural shift at both individual practitioner and manager level in addition to embedding an interface with and between analysts and researchers.

Core ethical concerns require consideration. Adequately balancing public interest and privacy considerations is critical to the use of these types of data for research purposes (Thomas and Walport, 2008; Scottish Government, 2012). Blueprints exist for processes that can safeguard the usage, linkage and reporting of findings from the analysis of administrative data (Scottish Health Informatics Programme, 2011; Scottish Government, 2012). Such frameworks integrate legal and ethical considerations with technical and physical infrastructures to reduce the risks, such as disclosure (unintended or not) and misuse, inherent in the use of personal data for research purposes (Laurie and Sethi, 2011). The seminars included reviewing an ethical framework that would satisfy the requirements of health and social care ethics committees and preserve the privacy of children and families. Access to parental administrative data, such as health records, economic records or past involvement with state child welfare agencies would provide additional contextual information but may be difficult to gather without direct consent, due to confidentiality concerns.

SURVEY DATA

A place for survey data?

Notwithstanding its self-evident strengths, longitudinal research utilising administrative data sets presents limitations. First, it cannot provide the comprehensive information that contributes towards a synoptic perspective on this child population. More importantly, despite providing information on inputs and outputs, for example child protection registration or episodes of public care, data on intervention and outcomes are generally absent. Administrative data are first and foremost oriented towards system and key performance indicators rather than specific outcomes. Second, data tend only to be gathered on citizens who receive services and this may not represent the community presence of problems of neglect and maltreatment. At the same time identifying positive outcomes beyond exit from child welfare systems is difficult in the absence of later system contacts. Arguably exit may be deemed a 'success' but this limits the exploration of factors potentially associated with this process.

Longitudinal surveys of children at risk (of delinquency) have provided important information about desistance, risk and protective factors (West and Farrington, 1973; Laub and Sampson, 2003; Loeber *et al.*, 1998). Few prospective longitudinal surveys

focus on children considered at risk of neglect and maltreatment. The Longitudinal Study of Child Abuse and Neglect (LONGSCAN, <http://www.iprc.unc.edu/longscan/>) and the National Survey of Child and Adolescent Well-Being (NSCAW, http://www.acf.hhs.gov/programs/opre/abuse_neglect/nscaw/) in the USA are exceptions. LONGSCAN incorporates a sample of children (n=1354) combined from five separate multi-site studies. Common measurement and data collection methods permit secondary analyses of larger pooled samples. NSCAW has a core sample of 5,501 children drawn from cases investigated/assessed by child protection services. Data are provided by 97 child welfare agencies involved with the children on patterns of service use, pathways through systems and outcomes. In the UK, Brandon and Thoburn (2008) followed up 77 children, aged 8 to 9 years subsequent to referral as at risk of or experiencing significant harm. They observed complex patterns of intervention and living arrangements for many children suggesting potential explanations associated with outcomes. Ward *et al* (2012) undertook an intensive study of 57 infants experiencing or at risk of significant harm following up 43 infants for three years. They identify the importance of evidence-based decision making and the avoidance of delay in contributing towards better outcomes for children.

Designing a survey

Longitudinal surveys raise well-recognised methodological challenges including defining theoretically informed core questions and data collection instruments fit for purpose over time (Rutter, 2010). Issues of depth (multi-method, intensive data collection) versus breadth (sample size and representativeness) (Nicholson *et al.*, 2002) require resolution. Tried and tested strategies to manage inevitable sample attrition, highly associated with social and economic deprivation, have been developed by large scale longitudinal prospective cohort studies such as Growing up in Scotland (GUS, <http://www.crfr.ac.uk/gus/index.html>), Millenium Cohort Study (MCS, <http://www.cls.ioe.ac.uk/Default.aspx>), National Longitudinal Study of Child and Youth, Canada (<http://www.statcan.gc.ca/start-debut-eng.html>). Such measures might include financial incentives. The over-representation of children from backgrounds of social and economic deprivation in child welfare populations (Bebbington and Miles, 1989; Gibbons *et al.*, 1995; Wallace and Henderson, 2004; Waterhouse *et al.*, 2000) may permit some comparison of developmental outcomes with disadvantaged sub-groups within other UK child cohort studies. Participation and consent from children and families should also include access to administrative records (for example health, education). In longitudinal research consent may need to be sought continuously rather than viewed as a one-off process. Children's consent raises specific temporal as well as ethical issues.

Capturing Intervention

Two issues continue to bedevil research in this field: defining and measuring intervention, especially the less tangible dimensions of relationship building with children and families; and the perennial issue of outcomes. Axford (2010) proposes a conceptual map of service measurement and points to the importance of developing a 'common language of services across administrative systems' that capture the content of what children and families receive in a meaningful way. He argues for the development of reliable and valid standardised measures of service that can be subject to agreed

‘protocols of analysis’ (p.480). Longitudinal research would require accurate measurement of service although pragmatism points to balancing depth and breadth in capturing the dimensions of ‘*service as usual*’ sufficiently well for statistical analysis. This should be informed by interventions known to be effective from current knowledge, that include data on the orientation of intervention (i.e. towards child, mother, father, sibling), the type of intervention and the intensity of intervention. In addition, these would need to take account of differing professional disciplines and mode of operation. Brandon (2011) suggested collecting data from parents/persons with most knowledge regarding a child offers good information about effective intervention (‘help’ is better understood) that includes some assessment of intangibles such as the quality of relationships. The process of engagement has been identified as highly influential on outcomes (Beresford and Branfield, 2006). Is there a space for personal outcomes? (Miller, 2011).

Focusing on well-being

As Axford (2010) observes outcomes of service have generally been assessed at individual child level through use of ‘looked after children’ and ecological assessment frameworks, (Parker *et al.*, 1991; Scottish Government, 2008; Children’s Workforce Development Council, 2009). As mentioned earlier, there is potential to aggregate these to allow for group level analysis (Stradling *et al.*, 2009). Outcomes suggest a final endpoint, but given the complexity of life-course development and continuities and discontinuities in child to adult outcomes and the movement of children in and out of risk (Feinstein, 2006), assessing child wellbeing at different time points may be more informative. Framed in this way wellbeing outcomes would provide a holistic perspective that captures the child in their social environment.

The use of well-validated standardised measures, for example the Strengths and Difficulties Questionnaire (SDQ) (Goodman *et al.*, 2010) could provide a population level view of behavioural development; similar data on cognitive development and physical growth could be gathered. Self-complete questionnaires for children (for example, the Viwpoint software, <http://www.vptorg.com/index.asp>) that can be customised and is already used by a number of local authorities in Scotland and England) are useful. Practitioners’ own *overall assessment* of a child’s well-being in broad terms might be useful. Linked with administrative data this could provide some rudimentary outcomes, for example, school attendance, statement of additional support needs, injuries, chronic illness, mental health, health checks for all children in the care system data, as a baseline.

DISCUSSION

Systematic reviews of manualised interventions point to programmes that appear effective in improving outcomes for some maltreated children (Barlow and Coren, 2004; MacMillan *et al.*, 2009). However, the majority of children in child welfare services tend to receive services from a range of professionals and agencies. Capturing the complexity of routine intervention and attributing outcomes in the context of relevant external factors is not straightforward. Linking routine administrative data provides an opportunity to begin to answer questions and provide a framework to

support research and planning, and to identify factors associated with intervention and wellbeing for further exploration. Different models of multi-disciplinary data linkage have been successful (Gill, 2001) and have contributed to learning about the functioning and impact of policies and service systems, for example the Millenium Cohort Study with the National Pupil Data Base (Elliot, 2009). Linking educational and health data for children looked after by local authorities and exploring differences across the UK might help to point towards the impact of intervention. This could then be subject to ethnographic research. At a very simple level, in Scotland, children may be subject to child protection registration and/or subject to a supervision order through the children's hearings system for child maltreatment concerns. But we have no idea how many children are in both systems. In a sample of children referred to the hearings for care and protection concerns, 14% (n=207) were subject to both the administrative and juridical systems (Waterhouse *et al.*, 2000). We need to make better use of the data we are already collecting.

Despite the UK's longstanding research investment in birth cohort and panel studies, they tell us little about the development of children in public child welfare systems. In an extensive analysis of UK panel studies, Maxwell *et al* (2012) point to relatively small samples of social work service users in child and youth cohort studies that either preclude data analysis or where sufficient numbers are present, limited information on social work intervention and service provision restricts investigation. The Edinburgh Study of Youth Transitions and Crime (<http://www.law.ed.ac.uk/cls/esytc/>) is an exception where data have been gathered on social work intervention for a small sub-set of children. These factors were echoed within the seminars despite the presence of booster samples of children from backgrounds of social and economic deprivation, a factor associated with child welfare involvement (Bebbington and Miles, 1989; Gibbons *et al.*, 1995; Waterhouse *et al.*, 2000).

A longitudinal survey of children vulnerable to neglect and maltreatment could provide a picture of pathways through child welfare systems and rich information on the nature, focus and intensity of multi-professional intervention, child wellbeing, and demographic information over time. Given the porous boundaries of children's difficulties, and the safeguarding context of multi-professional and multi-agency intervention in the UK, a broad sample of children referred to social work services for investigation and/or support would permit the survey of children allocated and diverted from the child protection system. This also would support a better understanding of associations between selection processes and outcomes in child welfare (Courtney, 2000).

Linking such a cohort survey with data on inputs and outputs including the use of formal legal and administrative authority, most reliably accessed via administrative data, would be helpful in creating the fullest picture. There is growing recognition of the potential to link longitudinal survey data with administrative data to populate gaps and to examine outcomes for children more comprehensively (Dearden, 2010). Administrative data could offer a solution to exploring some outcome data on 'non-returners' and provide a time-ordered retrospective 'event' history in system contact terms. Survey data linked with administrative data to compare allocated and non-allocated cases where systematic variation between contexts (local authorities, jurisdictions in the UK, for example) may also be useful in exploring potential reasons

for differentiation and provide some data about intervention. Farmer (2012) found active case management was the key variable associated with permanency for children in out-of-home care for reasons of neglect.

Sound methodological and analytic approaches to the use of longitudinal data are vital to their application to policy and practice evaluation. Levitas' (2012) critical analysis of the approach to identifying and counting 'troubled families' underpinning the policy response in England (Communities and Local Government, 2012) points to the importance of taking a rigorous approach to concepts and data within longitudinal research.

Evaluating the impact of multi-professional intervention on the lives of children in state protective systems remains an elusive target and needs to take account of the 'messiness' (Ruch *et al.*, 2010) of practice. Our knowledge about the effectiveness and efficiency of services is limited unless we can look across multiple disciplines and over long periods of time. These gaps in knowledge mean that we develop and operate services on the basis of assumptions that have not been tested out. Policy in the UK is focused on service integration (HM Treasury, 2003; Scottish Executive, 2005) and data that can inform the operation of this model remain central.

Conclusion

There is a need for national strategies with clear visions for better data management, linkage and use – but this has to be coupled with practitioner involvement, interest and drive for better information. At the same time a longitudinal survey of children in state protective systems has the potential to explore pathways through child welfare systems and the wellbeing of children in the context of the everyday multi-professional intervention provided. This could make a significant contribution to policy and operational evaluation and research for this group of vulnerable children.

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